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Weighing Technology

A Higher Level of Precision...
A Higher Level of Performance

Intell-Lab™ Precision Toploading Balances

P Series

User Operation Manual

June, 2009

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INSTALLATION INSTRUCTIONS

- **Remove** balance and accessories from the carton.
- **Do not install** the balance in a place with draughts, heavy thermic changes and vibrations.
- **Place** the weighing pan and the support pan on the balance (see page 4).
- **Level** the balance using the level bubble and levelling feet located underneath the case.
- **Connect** power supply to connector 2 located on the rear panel of the unit (see page 6).
- **Insert** power cord into AC outlet, **which shall be easily accessible.**
- **Wait 30 minutes from switch on** and calibrate the balance following the instructions (page 8-9).
- **Calibrate** the balance again every time it is removed from previous place.
- **Check** balance calibration periodically.
- **We recommend** not to drop heavy objects on balance pan, in order to avoid damages.
- **Assistance service** must be effected by specialized staff and the spare parts used must be original.
  Therefore, it is necessary to apply to the seller who sold the equipment.
- **Keep package** in case the balance should be sent back to the factory for service.

P Series Balances

KEYBOARD AND DISPLAY

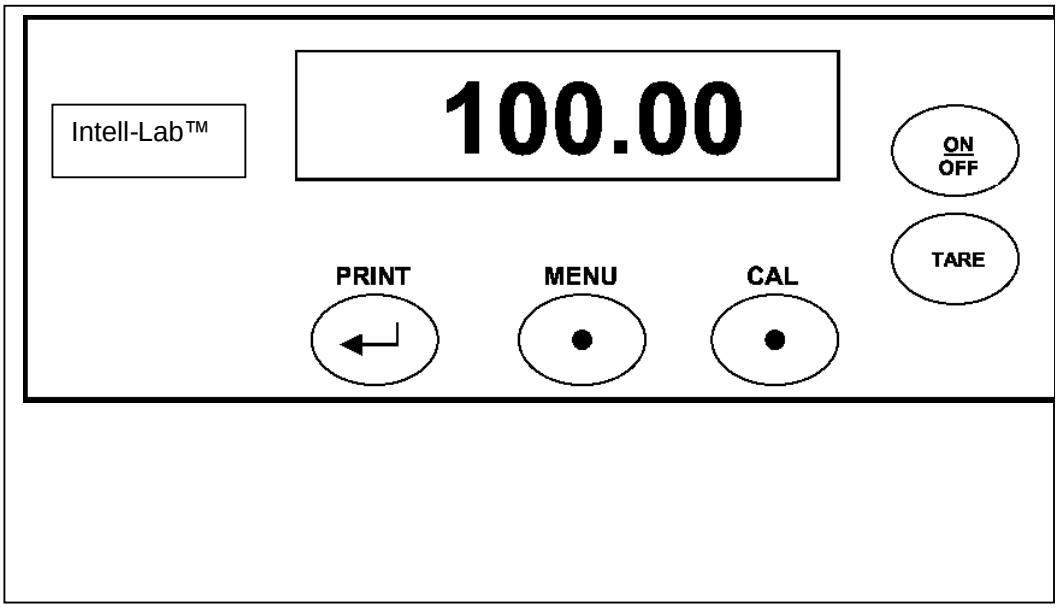
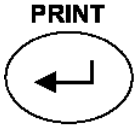
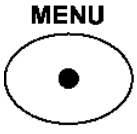


Fig. 1

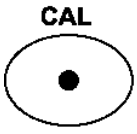
ON/OFF key.



It confirms selection from MENU key or it controls printing.



It selects setup MENU'.



CALIBRATION key.

TARE key.

Fig. 1a - Rear view

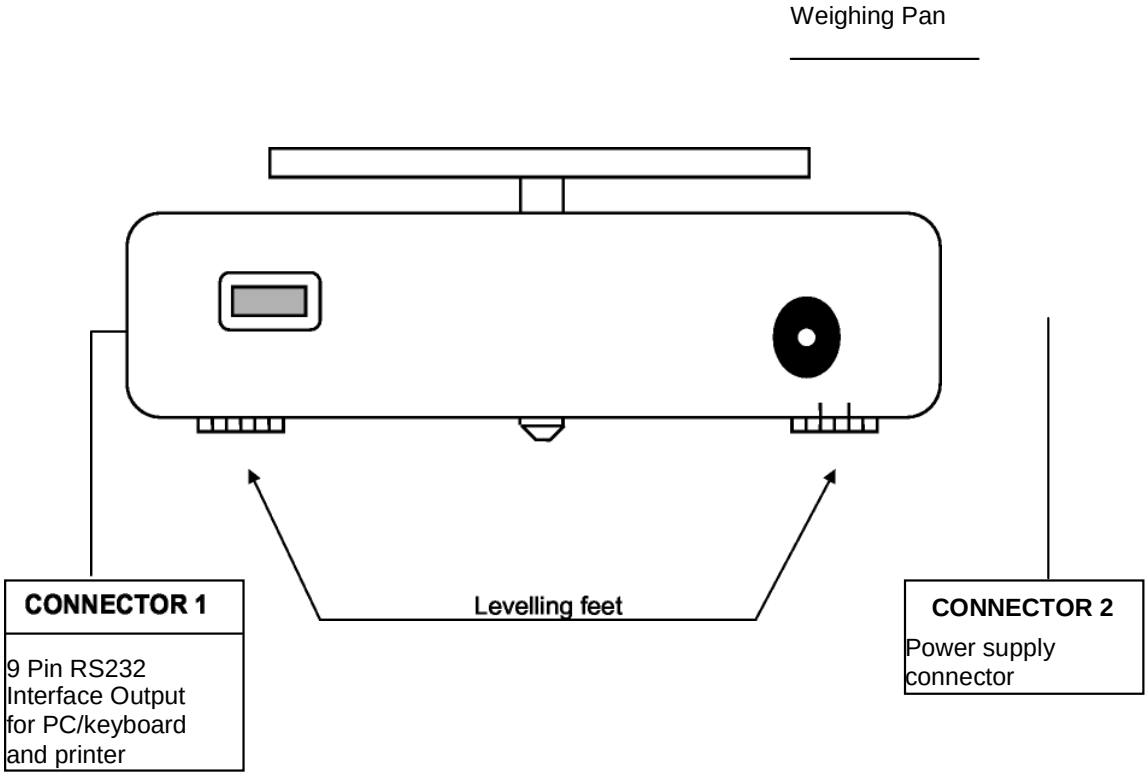


Fig. 2

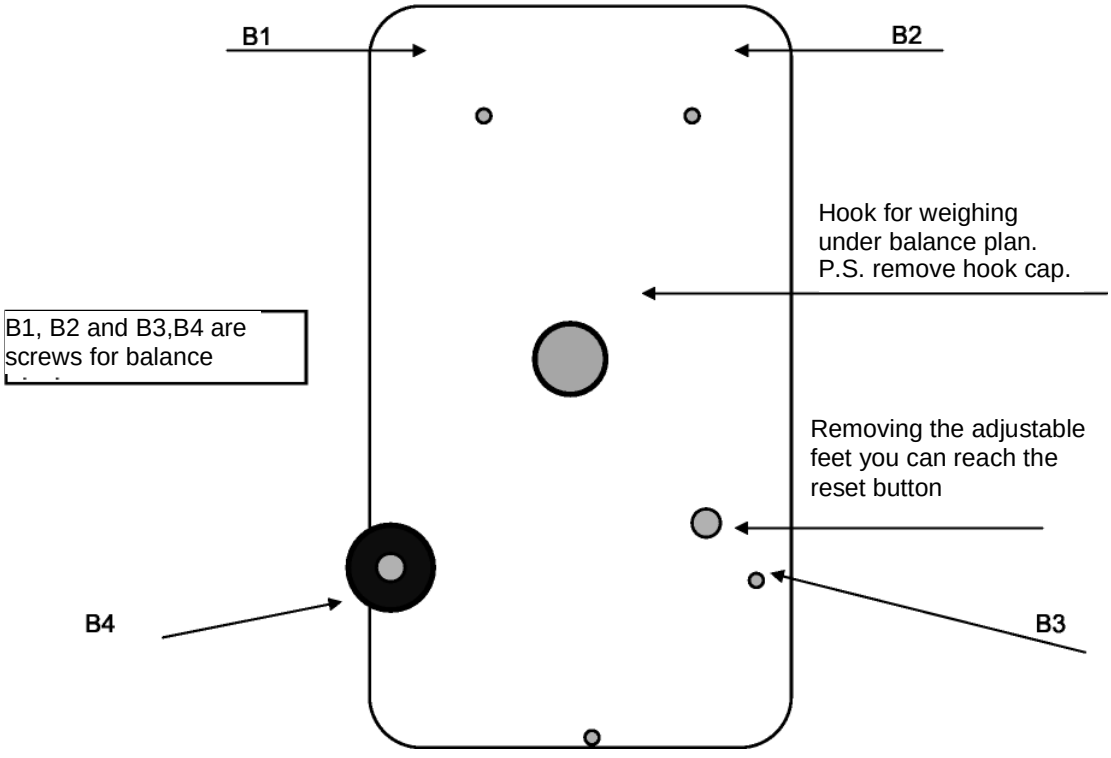
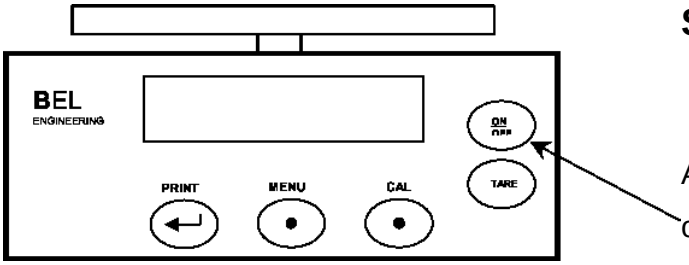

B1
B2
Hook for weighing under balance plan. P.S. remove hook cap.
B1, B2 and B3,B4 are screws for balance
Removing the adjustable feet you can reach the reset button
B4
B3

Fig. 2a - Bottom view



STAND BY

After having connected the balance to AC outlet to bring the balance to working conditions, press **ON/OFF** key.
To switch off again the balance, press and keep pressed **ON/OFF** key.

NOTE: the balance also has a reset key, placed under the adjustable foot, (as illustrated at the pag. 6). It must be used only in case of arrest of the balance.

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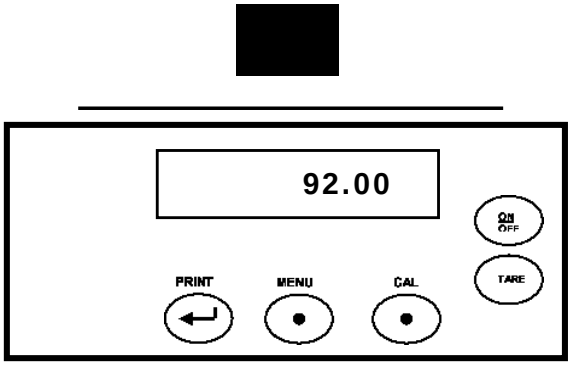
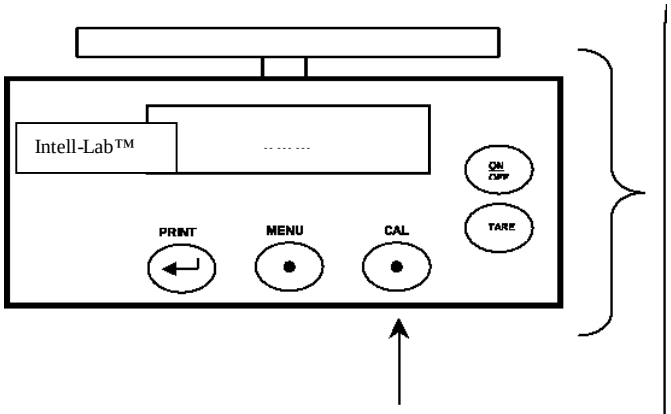


NORMAL WEIGHING

Load the good to weight on the pan and read weight value on display.

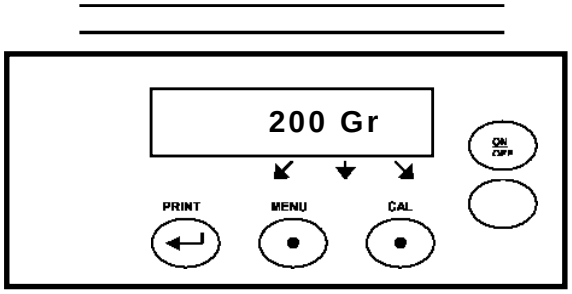
CALIBRATION



The electronic reading balance takes measurement of mass making use of gravity (g). Difference in geographic area and altitude will vary gravity acceleration (g). Therefore, for accurate measurement, scale must be adjusted to the local environment. This adjustment is accomplished by **CAL** key.

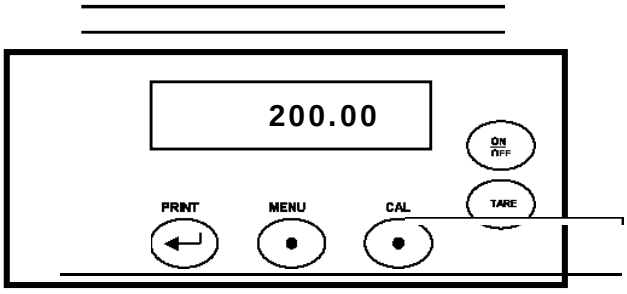
At empty pan, press **CAL** key.

Dashes are displayed.



When calibration weight value starts to flash, load the weight on the pan.

calib. weight



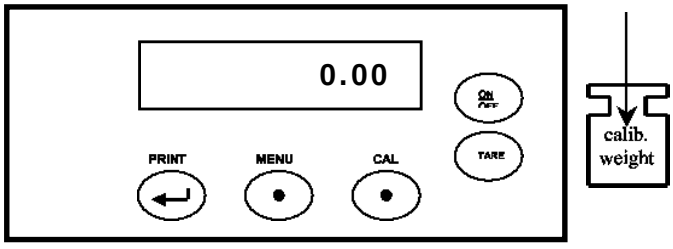
The display will stop flashing, indicating calibration weight value.

Wait for buzzer BEEP to confirm calibration.

Unload calibration weight from the pan.

The balance is ready for weighing operations.

NOTE: if there is an interference during calibration process, the message **"ERROR"** will be displayed.



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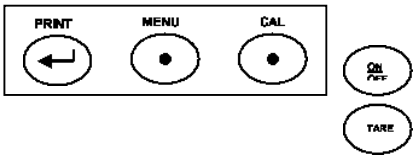
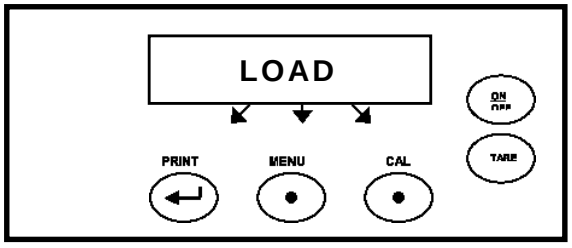
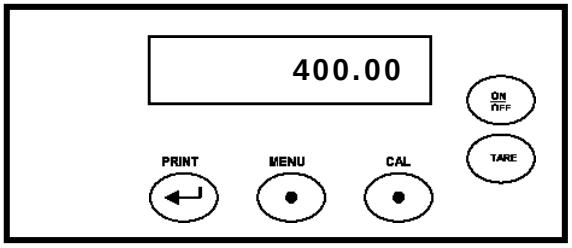
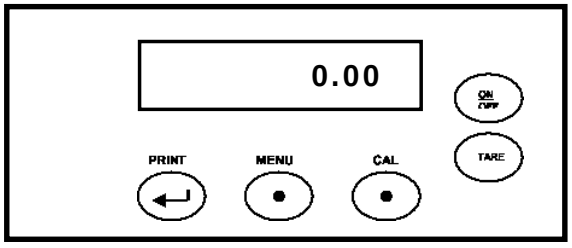


peso calib.

peso calib.







Moreover, it is possible to calibrate the balance with a calibration weight higher than the one set.
To perform this sort of calibration,press and keep **CAL** key pressed at empty pan until the acoustic alarm will be deactivated, then release the key and the following string "- - - -" will be displayed, followed by the flashing message **"LOAD" .**

Now load on the pan a weight equal or higher than calibration weight set; the balance will recognise as valid a weight equal or higher than calibration weight as long as it is a whole number in comparison with the most meaningful digit of calibration weight..

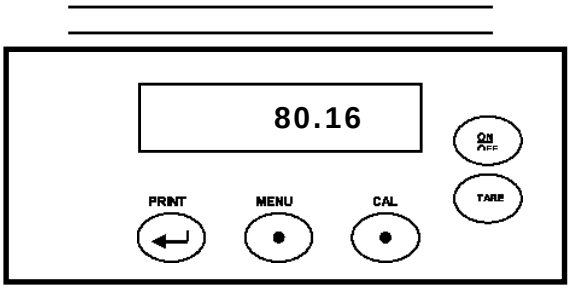
Example: if calibration weight is 200g, it will be possible to calibrate the balance with values from 200g,300g,400g up to the highest limit of balance weighing range.
The message **"LOAD"** on display will stop flashing.
Once calibration has been effected, the value of calibrated weight will be displayed.

Remove calibration weight.
The balance is ready for weighing operations.

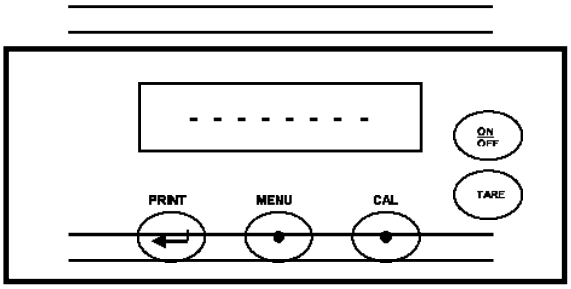
NOTE: if there is an interference during calibration process, the message **“ERROR”** will be displayed.

peso
calib.

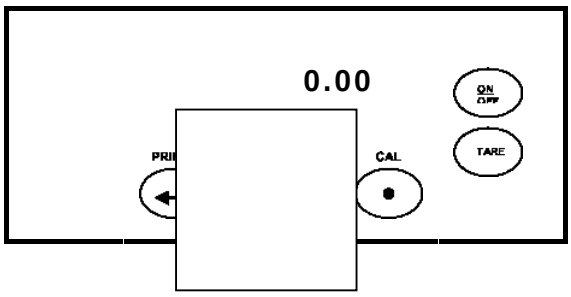
TARE FUNCTION



Load the container on the pan.
The weight will be shown on the display

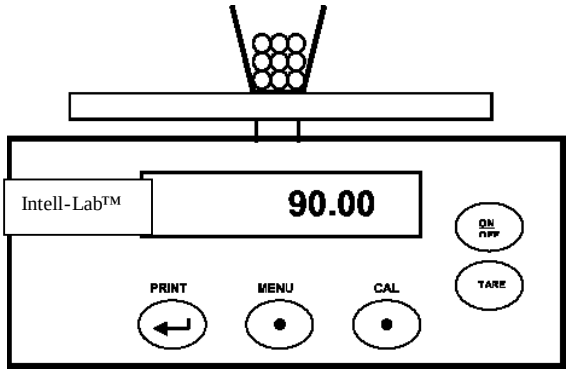


Press **TARE** key.
Dashes will be displayed until stability is reached.



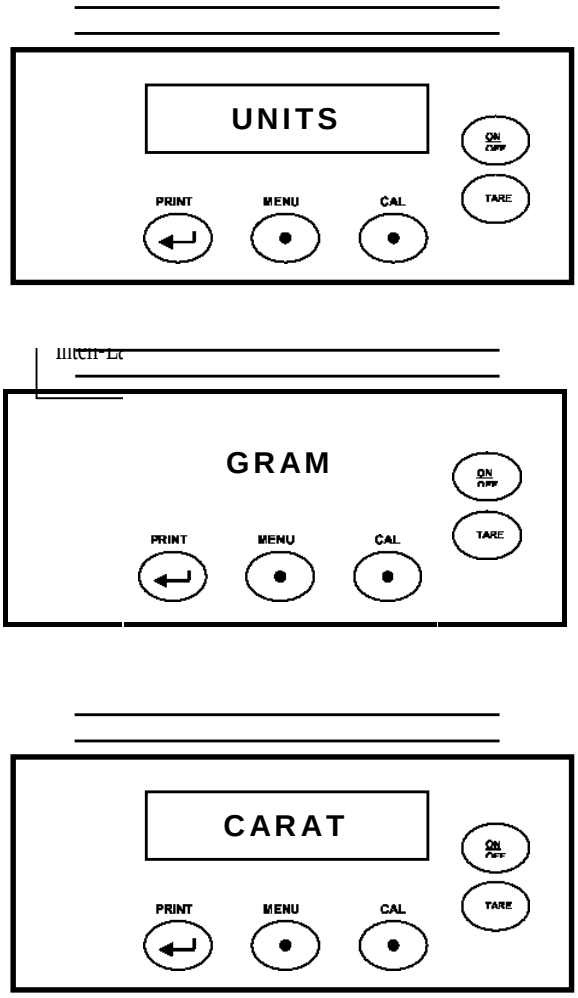
The value **"0.00"** will then be displayed when stability is reached.

In case stability cannot be reached because of draughts, vibrations or other problems, dashes will keep on being displayed.



Load the goods to weight in the container.
Read net weight value on display.

WEIGHT UNITS *



To display the weight unit, press and keep pressing **MENU** for two second.

From display zero condition, press **MENU** key until the message of unit **"UNITS"** is displayed.

Press key to confirm.

The unit **"GRAM"** will be displayed.

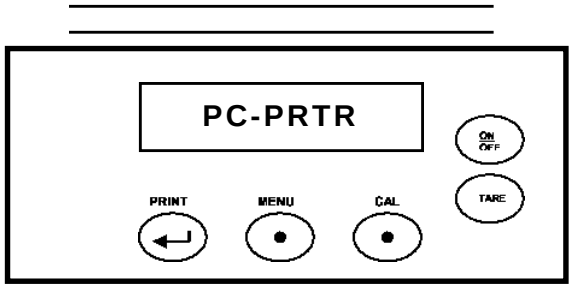
By pressing **MENU** key again, the message of unit **"CARAT"** will be displayed.

Press key to confirm or **MENU** to pass to another weight unit.

SYMBOL	MEASURE UNIT	CONVERSION FACTOR 1g =
GRAM	GRAMS	1.
CARAT	CARATS	5.
OUNCE	OUNCES	0.035273962
POUND	POUNDS	0.0022046226
PENN.	PENNYWEIGHTS	0.643014931
ONCETR.	TROY OUNCES	0.032150747
GRANO	GRAINS	15.43235835
TAEL HON	HONG KONG TAEL	0.02671725
* TAEL SGP	SYNGAPORE TAEL	0.02646063
* TAEL ROC	R.O.C. TAEL	0.02666666
* MOMME	MOMME	0.2667
* x 10	x 10	10.
* x 100	x 100	100.

*** Not available for all models.**

PC INTERFACE SELECTION



Connect the balance to PC with proper cable (page 6).

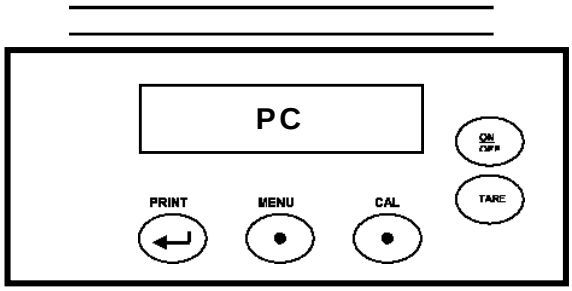
From display zero condition press **MENU** key until

the

message “

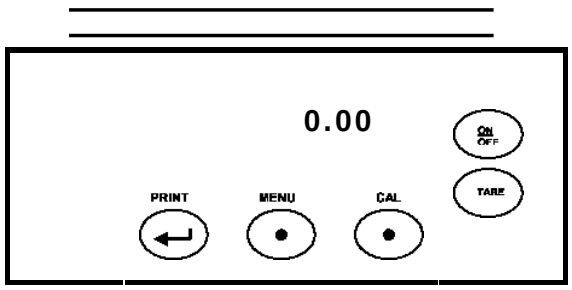
PC-PRTR “ is displayed.

Press key to confirm.



Press **MENU** key until the message **“PC”** is displayed.

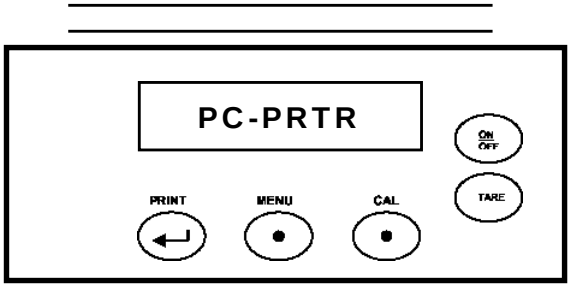
Press key to confirm.



The balance returns to normal weighing condition transmitting data conti nously.

NOTE: select baud rate (page 14).

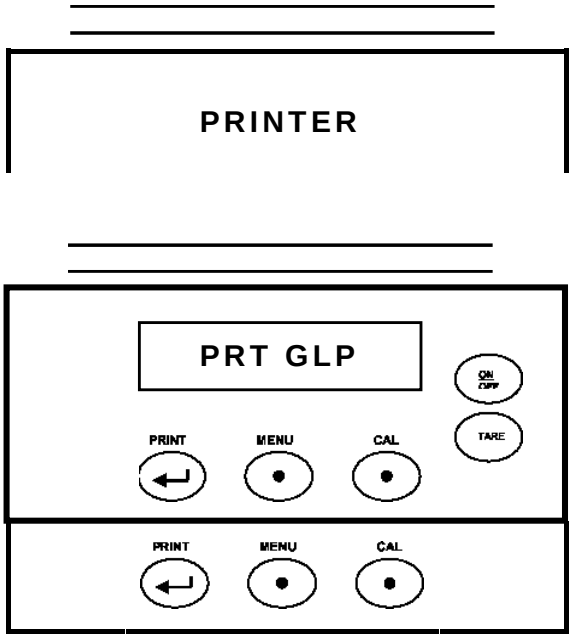
PRINTER INTERFACE SELECTION



Connect the balance to the printer with proper cable (page 6).

From display zero condition press **MENU** key until the message " **PC-PRTR "** is displayed.

Press ↵ key to confirm.



To select data printer mode press **MENU** key until the following messages will be display :

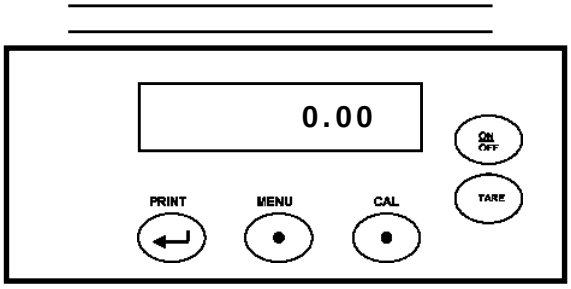
PRINTER: for printing of weight only

PRT TIM: for printing of date,hour and weight

PRT GLP: for printing of GLP data

(Printing modes PRT TIM and PRT GLP are available only using printer mod. CUSTOM DP24E4)

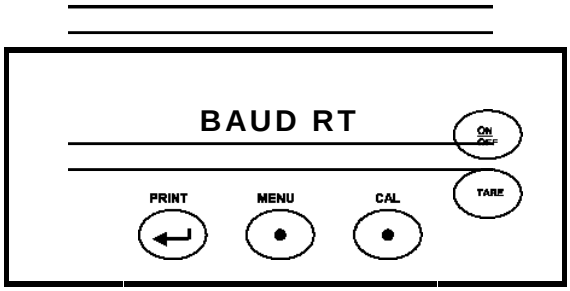
Press ↵ to confirm.



The balance returns to normal weighing conditions ready to weigh every time **PRINT** key is pressed.

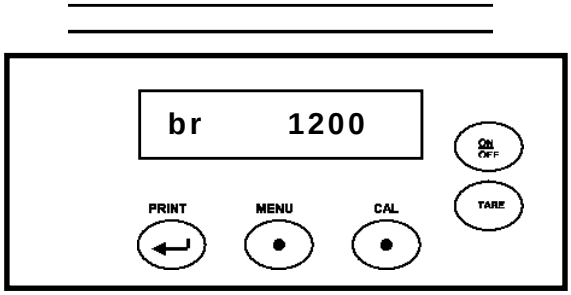
NOTE: select baud rate (page 14).

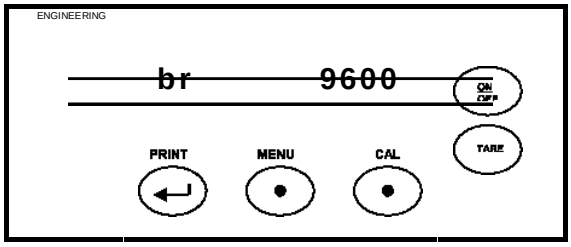
BAUD RATE SELECTION



Press **MENU** key until the message **"BAUD RT"** is displayed.

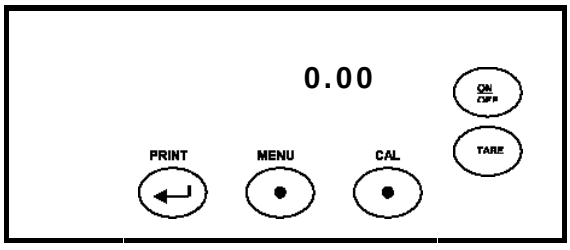
Press ↵ key to confirm.





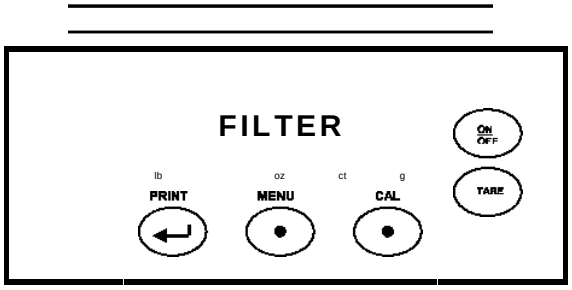
Select serial data baud rate (1200-2400-4800-9600 baud) by pressing **MENU** key in sequence.

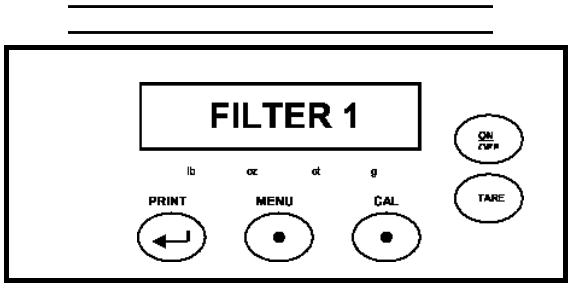
Confirm baud rate with ↵ kev.

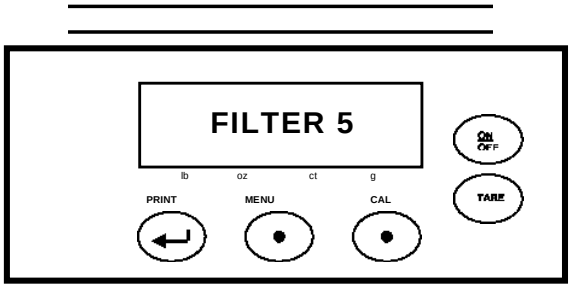


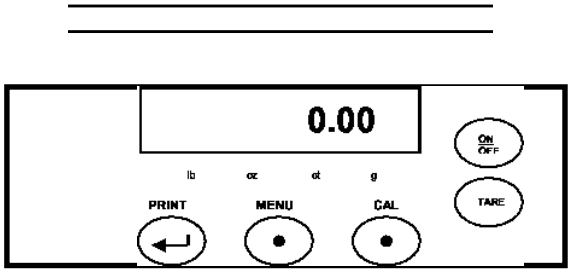
The balance returns to normal weighing condition.

FILTERS SETTING









The balance returns to normal weighing conditions.

It is possible to adapt the balance to the ambient conditions.

Five settings are available:

FILTER 1 : proportion of ingredients conditions

FILTRO 2 : very stable conditions

FILTRO 3 : stable conditions

FILTRO 4 : unstable conditions

FILTRO 5 : very unstable conditions

Press **MENU** key until the message

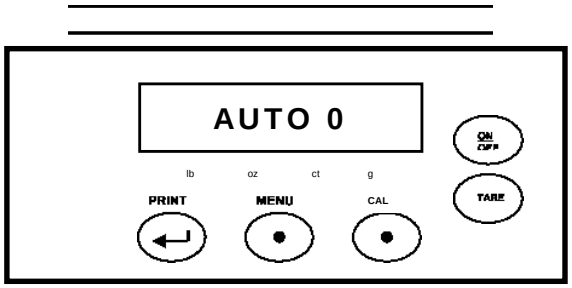
Press key to confirm.

select by **MENU** key **FILTER 1, FILTER 2…..FILTER 5.**

Confirm selected filetr with key.

“FILTER” is displayed.

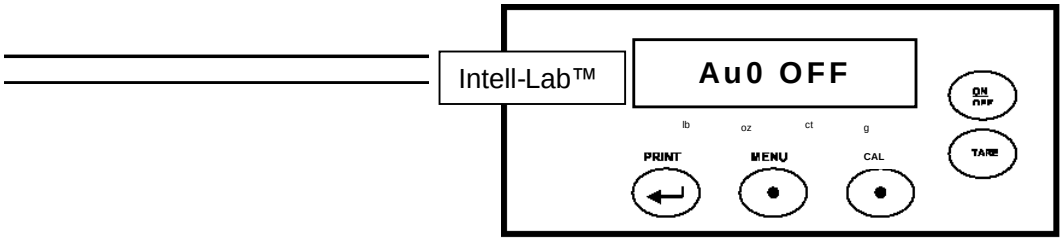
AUTOZERO FUNCTION



Autozero is a drift automatic correction from zero.

Press **MENU** key until the message **"AUTO 0"** is displayed.

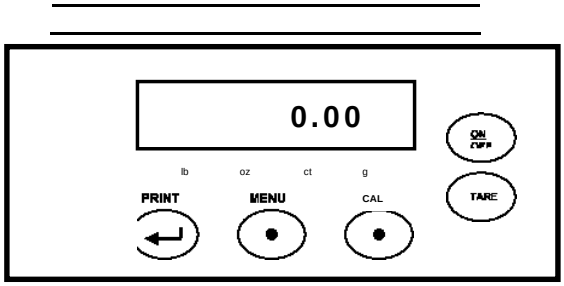
Press



Select by **MEN**

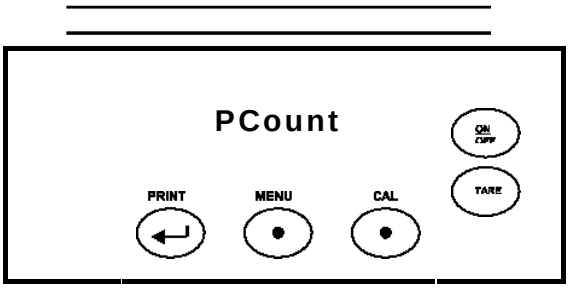
Au0 OFF = a
Au0 1 Au0 = l
2 Au0 3 = l
Au0 4 = l
= l

Press key to confirm



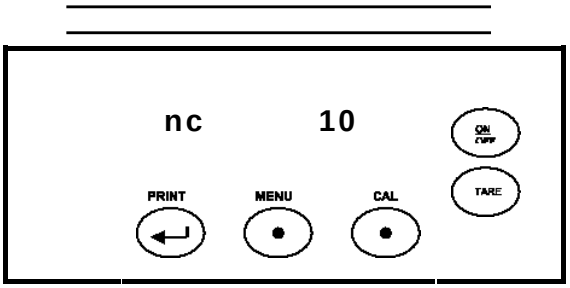
The balance returns to normal weighing conditions.

PIECECOU NTING FUNCTION *



From display zero condition, press **MENU** key until the message " **PCount "** is displayed.

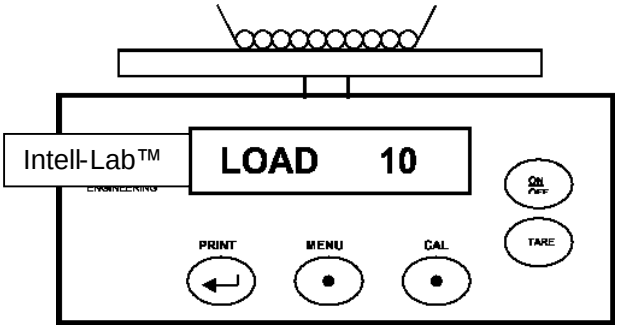
Press key to confirm.



Select the number of required pieces pressing **MENU** key repeatedly.

The choice of number of pieces (10, 25, 50, 100) is connected to the weight of the single piece.

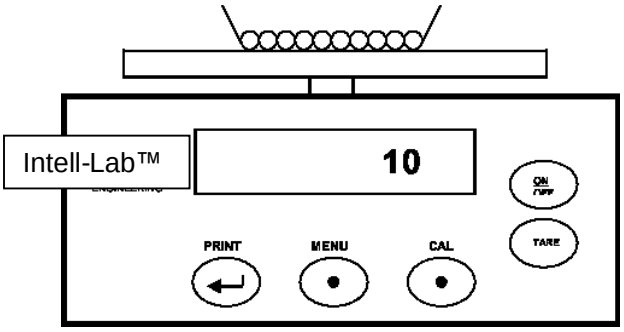
Press key to confirm.



Load on the pan the number of pieces indicated on the display.

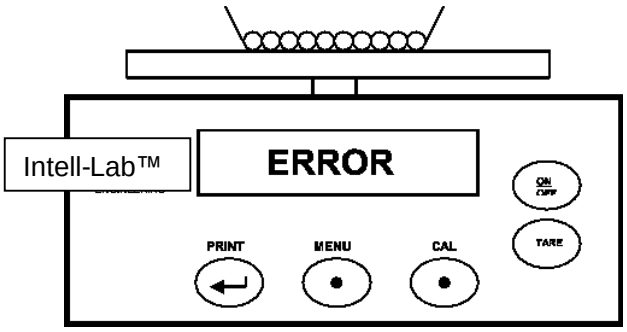
Press key once again.

Wait for stabilization of the weight.



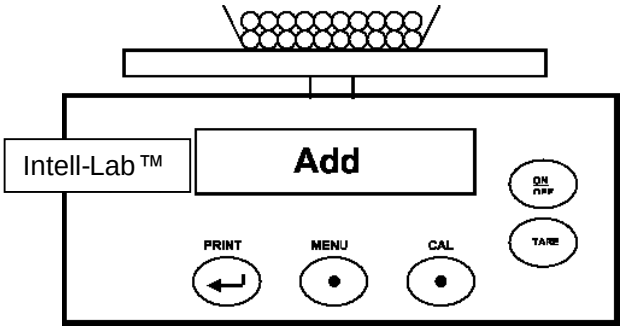
If the number of samples is enough (for example n. 10 as in picture) their number will appear on the display and it will be possible to effect counting .

*** Not available for all models.**



If the pieces to count have a too smaller weight than balance readability, the message **"ERROR"** will be displayed.

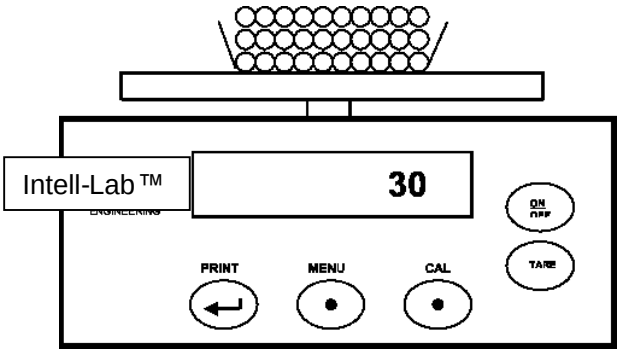
It is necessary to use a balance at higher readability.



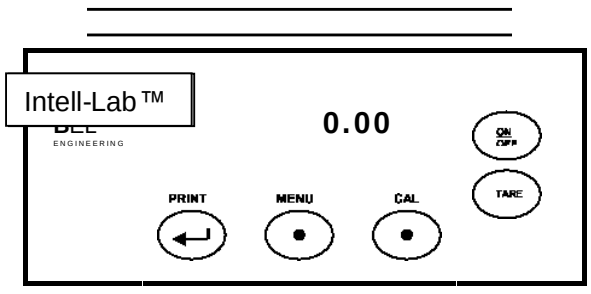
If the sample weight is acceptable but not enough, the message **"Add"** will be displayed.

Add a certain number of pieces so that the quantity on the display is approx. doubled, then press key.

If the quantity of pieces is still not enough, the message **"Add"** will be displayed again. Double again the quantity read on the display.

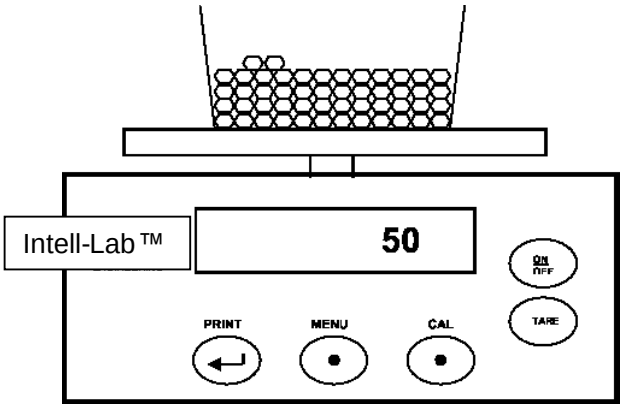


On reaching the sufficient number of pieces, their quantity will be displayed and it will be possible to proceed to count them loading the pieces to count on the pan.

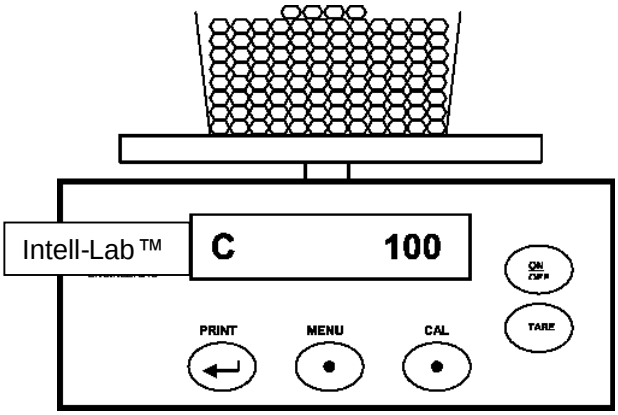


To escape from piececounting mode press **ON/OFF** key, and the balance will return to normal weighing conditions.

AUTOMATIC UPDATING OF UNIT WEIGHT



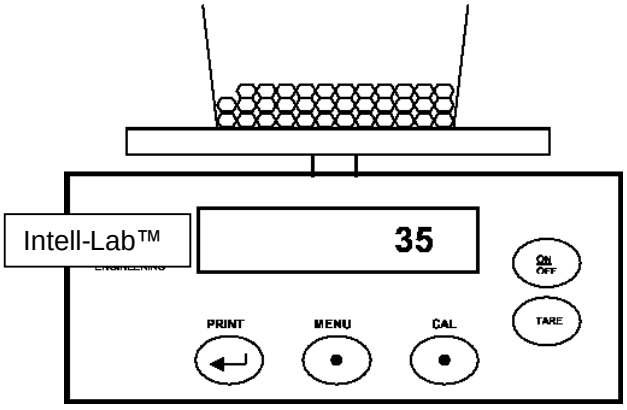
After having effected the sampling, it is possible to update the average unit weight as follows :
instead of loading all the pieces to count, load a number of pieces equal to the double of the one loaded on the pan. Wait for the symbol **C** to be displayed followed by a short acoustic message.



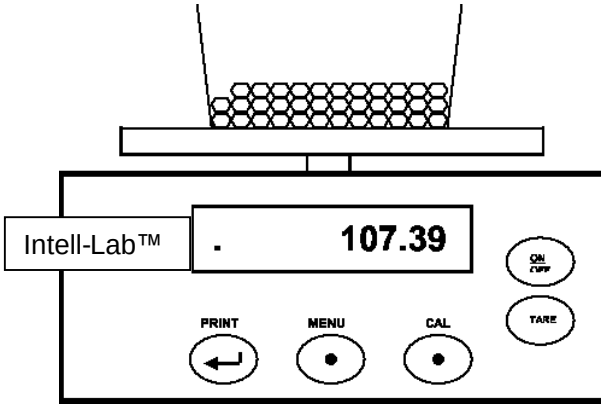
Now it is possible to repeat this procedure up to a maximum of 255 pieces or proceed to the normal counting of the pieces. This mechanism grants a more precise evaluation of the average unit weight and a better precision in counting of pieces.

NOTE: the mechanism of the automatic updating is not active if the sampling has been effected by insertion of the average unit weight from alphanumeric keyboard.

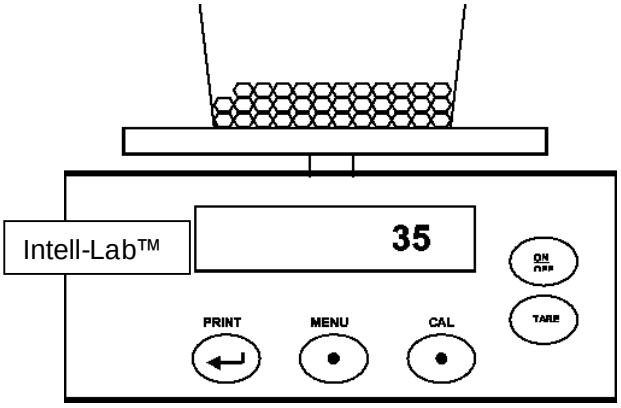
DISPLAY OF WEIGHT IN PIECECOUNTING CONDITION



To display weight value during the counting of pieces, press **MENU** key.



This condition is indicated by lighting of a point on the left of the display.



To return to piececounting condition and proceed with counting, press **MENU** key again.

DETERMINATION OF SOLID DENSITY FOR BALANCES WITH PROPER OPTIONAL SOFTWARE *

Balance program allows to determine solid density through four steps:

–**TARE IN AIR;**
–**TARE IN WATER;**
–**SOLID WEIGHING IN AIR;**
–**SOLID WEIGHING IN WATER.**

STORAGE OF TARE IN AIR

Tare in air (weight of the small basket in air) is about zeroing of small basket weight in air. Press **TARE** key to effect this operation being sure that value displayed is **"0".**

STORAGE OF TARE IN WATER

Select density menu by pressing **MENU** key. The message **"DENS"** is displayed. By pressing **TARE** key the message **"t.H20"** is displayed. Dip the small basket in water and press **TARE** key once again. The message starts flashing until stability is reached, then an acoustic alarm is given out. Tare value in water is stored until balance is switched off, and it can be changed repeating the same sequence of operations above mentioned.

DETERMINATION OF SOLID DENSITY

Select **"DENS"** by pressing **MENU** key and then press **CAL** key. The message **"S.AIR"** will be displayed. Load a solid in the small basket and press **CAL** key. The message starts flashing. As soon as it is stable, an acoustic alarm is given out and the message **"S.H2O"** is displayed. Dip the small basket with the solid in water and press **CAL** key once again. The message will flash. As soon as stability is reached, an acoustic alarm is given out and density value is displayed.
Press **MENU** key to return to weight display.
Press **PRINT** key to print the value displayed.

*** Not available for all models**

SERIAL INTERFACE RS 232

1) General characteristics

The balance sends the value displayed in serial form RS232C, allowing to print weight on PC monitor or on a serial printer. In case of connection with PC, it is also able to get commands, always in RS232C format, that allow to effect all operations with balance keys through PC keyboard. Baud rate is selectable trough **MENU** and keys, as shown previously, at 1200, 2400, 4800, and 9600 baud. The format of character is of 8 bit preceded by a start bit and followed by a stop bit. Parity is not considered.

1) Interface selection for PC

Selecting PC output (personal computer IBM compatible) through **MENU** and keys, weight is sent continuously at the same frequency with which weight indication is updated on display. It is possible to effect all balance functions directly from PC keyboard, sending to the balance ASCII cods indicated in the list

CODE	FUNCTION
"T" = H54	TARE
"C" = H43	CALIBRATION
"E" = H45	ENTER
"M" = H4D	MENU

The connector to use for PC connection is n.1 (fig.1 page 24).

2) Interface selection for printer

Otherwise, if it has been selected output for serial printer, weight value will be printed, once this will be stable, pressing **PRINT** key. If weight does not become stable in 10 seconds, the message **"ERROR"** will be displayed and an acoustic alarm will be emitted.

The connector to use for printer connection is n.1 (fig. 1 page 24).

3) Display format

The string sent is composed of 14 characters: -

first character : weight symbol (space or -) ;

- second - ninth character : weight or pieces number ; -

tenth - twelfth character : measure unit symbol ; -

thirteenth character : carriage return ;

- fourteenth character : line feed.

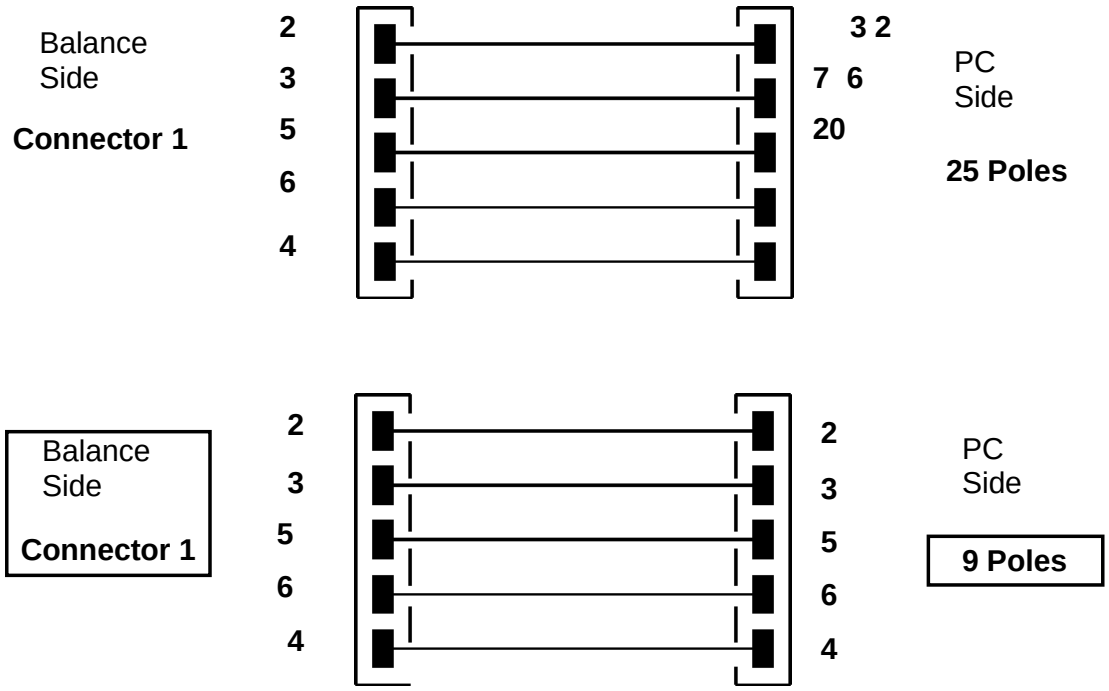
Possible non-meaningful zeroes are spaces.

ATTENTION

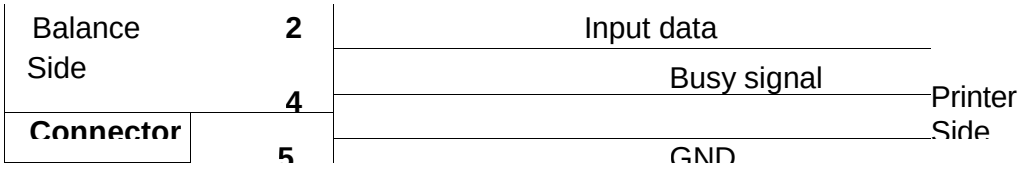
When the balance is in over range condition, weight value transmitted is replaced by strings “over” and “under” (only if PC output has been selected).

5) Connecting balance to PC

For connecting balance to PC, use connector 1 on the rear side of the balance as shown in the following figure :



6) **Connecting balance to serial printer** To print weight, connect connector 1 of the balance to serial printer as shown below :

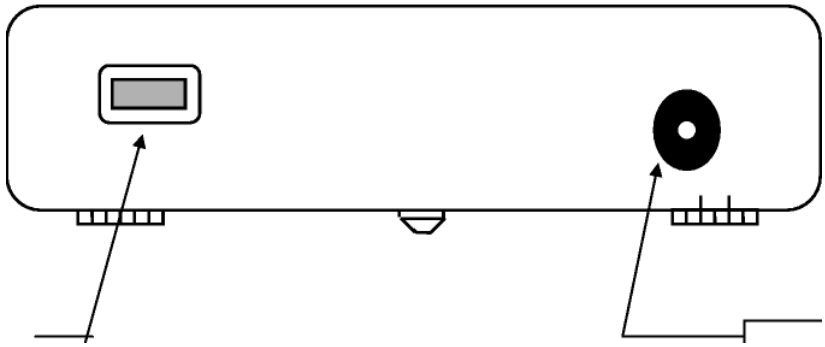


7) Connecting balance to optional keyboard

Connector 1, used for connection to PC, can also be used for possible connection to alphanumeric keyboard.

Connectors located on the rear panel of the balance

Fig. 1 Rear view panel of balance



Connector 1 :
Keyboard/PC/
Printer

Connector 2 :
Supply
connector

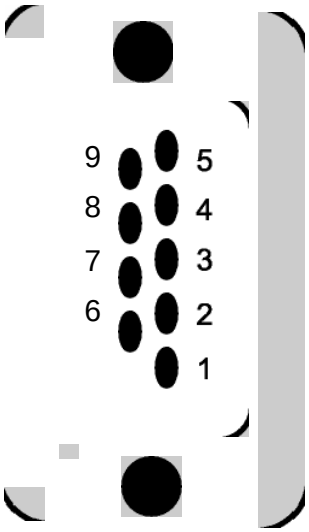


Fig. 3

CONNECTOR 1

FOR KEYBOARD OR PC OR PRINTER

pin 1 = +5v for keyboard
pin 2 = Tx signal (PC) =
pin 3 Rx signal (PC) =
pin 4 busy signal
pin 5 = Gnd
pin 4-6 = connected one with other
by PC transmission

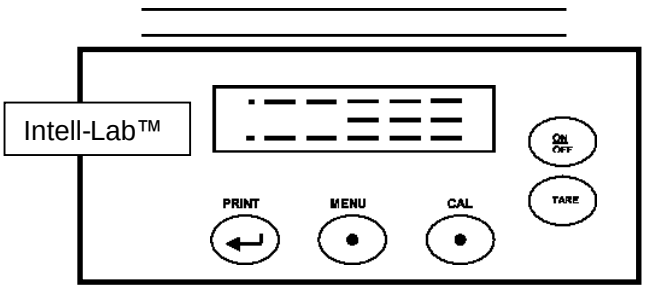
Fig. 4

BATTERY OPERATING DIRECTIONS

The balance can be used with the battery supply.

The battery inside the balance (mod. FP612 6v 1,2Ah) lasts for 8 hours.

To verify its charge level, keep pressing for 2 seconds the key **TARE.**



The charge level of the battery is indicated by the broken bar in the centre of the display.

When the charge level of the battery is too low to guarantee the correct working of the balance, the display will show automatically the writing LOW BAT and all the functions will be disconnected.

The supplied external power supply must be connected to re-charge the battery.

Battery's recharge time is about 12 hours.

Only when the broken bar will be completely on, the battery is completely recharged.

NOTE:

WARRANTY CONDITIONS

1. Duration of warranty is of one (1) year from the date of purchase proved by invoice concerning the product or by delivery note.

2. Warranty covers all parts resulting defective at the origin. It does not cover mechanical or electronic parts damaged by wrong installation, tampering or incorrect use.

3. Warranty does not cover damages caused by impacts, balance drops or drop of objects on weighing pan.

4. Shipment to and from service center is at customer charge

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